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AUTHOR Greene, John
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ABSTRACT

This document presents the evaluation design and findings of the second year of operation of the Experimental Bicultural Early Childhood Program, an Elementary and Secondary Education Act (ESEA) Title III project operating in Bridgeport, Connecticut. The major objectives of the program were: (1) to facilitate the development of school readiness skills for 3- and 4-year-olds in the Pre-Kindergarten component of the program; (2) to promote maturational growth and development of certain skills with 3-year-olds through parental orientation and training in the home, and to make available to families educational toys and other materials, using the child's dominant language; and (3) to provide a Kindergarten experience for children who participated in the program the previous year, and to promote readiness for a formal learning situation in terms of commonly accepted learning readiness skills. The target population was approximately 65% Spanish-speaking. The evaluation technique, process and sequence, and the results, are presented, discussed, and analyzed. (MS)

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ANNUAL EVALUATION REPORT

Experimental Bicultural Early Childhood Program
ESEA, Title III
Bridgeport, Connecticut

Dr. John Greene
University of Bridgeport
June 1975

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TABLE OF CONTENTS

	page
Introduction	1
I. Statement of Project Objectives	2
II. Description of Evaluation Population	3
III. Evaluation Technique, Process and Sequence	4
IV. Presentation of Results	8
V. Analysis and Conclusions	22

The purpose of this document is to present the evaluation design and findings for the second year of operation of the Experimental Bicultural Early Childhood Program, an ESEA Title III project operating in Bridgeport, Connecticut. The period of funding dates from July 1, 1974 to June 30, 1975.

The evaluation represents the coordinated effort of several persons involved with the project on a professional level. In particular, Dr. Leo Sperling of the Bridgeport Board of Education and Ms. Virginia Lity, the Project Director, have made significant contributions. Many of the charts, tables and written comments compiled by these persons are incorporated in this report.

The format of this report generally follows the project evaluation reporting system guidelines prepared by the Title III State Consultant. The only variance is that the evaluation techniques are presented in Section III. Consequently, the report is partitioned into five sections as follows:

I. Statement of Project Objectives
II. Description of Evaluation Population
III. Evaluation Technique, Process and Sequence
IV. Presentation of Results
V. Analysis and Conclusions

I. STATEMENT OF OBJECTIVES

The major objectives for the Experimental Bicultural Early Childhood Program are as follows:

1) To facilitate the development of school readiness skills in the general areas of spatial relationships, language use, color, numerical relationships and abstractions for 3 and 4 year olds in the Pre-Kindergarten component of the program.

2) To promote maturational growth and development of certain skills with 3 year olds through parental orientation and training in the home, and the availability to families of educational toys and other materials, using the child's dominant language.

3) To provide a Kindergarten experience for children who participated in the program the previous year, and to promote readiness for a formal learning situation in terms of commonly accepted learning readiness skills.

II. DESCRIPTION OF EVALUATION POPULATION

The evaluation focused upon a target population consisting of pre-kindergarten children residing in an attendance area corresponding to two schools in Bridgeport, namely the Barnum and Garfield Schools. These schools are populated predominately by Hispanic students. Approximately 65% of the project recipients were Spanish-speaking.

III. EVALUATION TECHNIQUE, PROCESS AND SEQUENCE

Several evaluation techniques were employed to monitor the operation of the program and to determine the effectiveness of the project. Each technique is comprehensively described below. Included within the descriptions are comments pertaining to the related process and sequence of events. The corresponding objective is also referenced in parentheses.

Pre-K Component

The Cooperative Pre-School Inventory was administered on a pre-post basis in October 1974 and May 1975 respectively to each child in the Pre-K Component in his dominant language. Children in the Toy Lending Component were only tested in May. This inventory consists of four subtests: Personal-Social Responsiveness (A); Associative Vocabulary (B); Concept Activation-Numerical (C1); and Concept Activation-Sensory (C2). The number of items for each subtest ranges from 12 to 19. A description of each scale follows:

Personal-Social Responsiveness:

> knowledge about the child's own personal world and his ability to get along with and respond to communications of another person.

Associative Vocabulary:

> ability to demonstrate awareness of the connotation of a word by carrying out some action or by associating to certain intrinsic qualities of the underlying verbal concept.

Concept Activation-Numerical:

> ability to label quantities, to make judgments of more or less, to recognize seriated positions.

Concept Activation-Sensory:

> to be aware of certain sensory attributes (shape, size, motion, color) and to be able to execute certain visual-motor configurations.

In addition, a total score may be compiled.(Objectives, 1,2)

The Child Rating Scale for Teachers was also administered on a pre-post basis. This locally developed scale utilizes a 5-point Likert-type scale to record teacher ratings in the following 12 areas:

Communications
Speech
Vocabulary
General Information
Manual Skills
Coordination (muscular)
Persistence
Task Solving Approach
Interpersonal Relations
Nervousness
Behavior
Self-Image

Each area is appropriately defined within the scale and specific behaviors are linked to the response options. High scores (4,5) reflect high levels of development. (Objective 1)

In May, 1975 the evaluator conducted an on-site observation to observe the Pre-K component in operation. During the visit the evaluator discussed general policies with project administration, examined materials and facilities, briefly interviewed project staff and students, and observed children participating in program activities. (Objective 1)

Kindergarten Component

The Inter-American Comprehension of Oral Language Test was administered in Spanish and English to the children participating in the kindergarten component on a pre-post basis. This test was designed to assist in the assessment of language ability at early stages of formal instruction. The subject responds to words and phrases presented orally. The test includes 3 practice exercises and 30 items. The total score represents the number of items answered correctly, excluding the practice exercises. (Objective 3)

The Screening Test of Academic Readiness (STAR) was given in the Fall of 1974 as a pre-test and again in the Spring of 1975 as a post-test. The test contains 50 items distributed across 8 domains: picture vocabulary, letters, picture completion, copying, picture description, human figure drawing, relationships and numbers. The entire test is timed item by item and each item is printed on a colored page contrasting it from adjacent pages. The time intervals range from 10 to 120 seconds. The resulting scores may be used to screen pre-school children leading to individualized plans of action, screen kindergarten children for potential sub-grouping and individualized activities, and measure the effect of planned development or remedial programs.

The test publisher of STAR reports inter-scorer reliabilities in excess of .97 and test-retest reliabilities of .87 and .91 across 4 and 8 week intervals respectively. Satisfactorily high empirical validity is also claimed through correlations ranging from .67 to .76 with the Stanford-Binet (Form L-M) and the Metropolitan Readiness Tests. (Objective 3)

The Child Rating Scale for Teachers was also given on a pre-post basis. This scale is described in the first part of this section. (Objective 3)

In addition, the evaluator observed the kindergarten component in operation in May, 1975. During this visit, respective staff members were briefly interviewed, materials and facilities were examined, students were observed participating in activities and later interviewed, and record-keeping procedures were reviewed. (Objective 3)

IV. PRESENTATION OF RESULTS

Pre-K Component

The results of the Cooperative Pre-School Inventory for the total group independent of administration language are given in Table I. The pre-program and post-program means were compared for significant differences at the .05 level using a one-tailed correlated t-test. Test-retest reliabilities are also presented in this table. Although these coefficients only provide an estimate of reliability because of treatment confounding, their presentation (in this and subsequent tables) is further justified as they constitute an essential factor in the determination of the correlated t-value.

Table I

COOPERATIVE PRE-SCHOOL INVENTORY RESULTS

TOTAL GROUP, N=46

Domain	pre		post		r	correlated t-value
	mean	s.d.	mean	s.d.		
Person-Social Responsiveness	8.76	3.66	12.70	3.33	.66	9.20**
Associative Vocabulary	5.14	3.24	8.36	3.07	.39	6.17**
Concept Activation-Numerical	5.39	2.75	9.35	2.71	.65	11.67**
Concept Activation-Sensory	8.63	4.14	14.61	3.74	.49	10.17**
Total	28.65	15.42	44.98	11.17	.64	9.25**

**p<.01

As may be seen by viewing Table I, significant gains were realized in all domains beyond the .01 level. Of particular importance is the gain exceeding 16 units in total score. The reliabliities ranged from .39 to .66 for the subtests, and the reliability for the complete battery was .64.

Table II contains the Cooperative Pre-School Inventory results partitioned by administration language. The results of 6 students whose post-test administration language differed from the pre-test administration language are not included.

TABLE II

COOPERATIVE PRE-SCHOOL INVENTORY RESULTS
PARTITIONED BY ADMINISTRATION LANGUAGE

English, N=22

Domain	pre		post		r	correlated t-value
	mean	s.d.	mean	s.d.		
Person-Social Responsiveness	10.95	3.68	14.82	2.52	.67	6.64**
Associative Vocabulary	6.95	3.03	10.05	2.01	.60	5.97**
Concept Activation-Numerical	6.64	2.79	10.50	2.92	.72	8.54**
Concept Activation-Sensory	11.23	3.79	16.45	2.86	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	9.10	.63	4.95**

Spanish, N=18

Domain	pre		post		r	correlated t-value
	mean	s.d.	mean	s.d.		
Person-Social Responsiveness	6.83	2.31	10.44	2.77	.24	4.87**
Associative Vocabulary	3.34	2.02	6.22	3.02	-.25	3.03**
Concept Activation-Numerical	3.78	1.86	8.22	1.93	.52	10.17**
Concept Activation-Sensory	5.94	2.75	11.89	3.54	.02	5.68**
Total	19.61	6.59	36.78	9.05	.27	7.54**

**p<.01

Table II reveals that the directionality of the results is consistent for both the English and the Spanish administrations, but that the students given the test in English had relatively advanced pre-test scores. It also should be noted that the reliabilities were extremely low for the Spanish administration. While this may have been caused by the low sample size and confounding with the treatment effect, certainly further investigation in this area is warranted.

Table III contains the results of the Child Rating Scale for Teachers.

Table III

CHILD RATING SCALE FOR THE TEACHERS RESULTS
N=61

Domain	pre	post	change
Communication	2.67	3.41	+.74
Speech	2.78	3.40	+.62
Vocabulary	2.72	3.42	+.70
General Information	2.77	3.36	+.59
Manual Skills	2.86	3.71	+.85
Coordination (muscular)	2.91	3.81	+.90
Persistence	2.76	3.73	+.97
Task Solving Approach	2.76	3.73	+.97
Interpersonal Relations	2.95	3.61	+.66
Nervousness	3.08	3.51	+.43
Behavior	3.11	3.60	+.49
Self-Image	2.80	3.49	+.69

As revealed in this table, positive changes were found during the project year in each of the 12 domains considered. The most extensive gains were attained ih persistance, task solving approach, muscular coordination and manual skills.

The on-site visit to the Pre-K component was conducted on May 12, 1975. The evaluator was accompanied by Dr. Leo Sperling of the Bridgeport Board of Education. Upon arrival at the Barnum School, the evaluator discussed the program with the principal of the school and noted that the project was under the public school administration during the second year of operation.

In the classroom, 1 teacher and 1 aide were providing services for 12 students. Five students were reported to be absent. The students were making finger-prints with ink and paper, and both the teacher and the aide were directly working with the children. The students spoke and were addressed in English and Spanish.

During a group interview, 5 students verbally listed the following as activities or "things they do" in school:

play
rest
paint
eat lunch (actually just a snack)
color
count numbers
work with letters
sing
listen to teacher read

As the evaluator established rapport with this group, they eagerly demonstrated their abilities in several areas. It was interesting to note that they counted to 20 in English but only to 8 in Spanish. They also recited the alphabet in English. After probing more deeply with the children, the evaluator was able to determine that the children were not familiar with the sequencing of letters and

numbers. That is, they were unable to state which number comes before "8" or which letter comes before "P".

The students even sang songs for the evaluator. In these songs they identified parts of their body and referenced numbers.

The teacher then noted that the parents escort the children to and from school.

The room was adequately equipped. Many manipulative materials were available in an adjacent store-room. SRA and Spoken Arts Inc. worksheets were displayed in packets on the wall for individual students. A growth chart was also mounted on the wall. The room was located next to the bilingual classroom, separated by a wooden, moveable partition.

[illegible] parents, and the total attendance was reported to be 200. Activities at these meetings included bilingual television, multicultural dinner, family picnic, Christmas party, and a discussion of providing reinforcement of school learning.

In the Toy Lending Component of the program, 24 of 29 children were given the Cooperative Pre-School Inventory. At the time of the testing in May, 1975, their mean age was 4 years, 5 months. The mean total score for the 24 children was 32.71. Based on national norms, this mean is equivalent to the 62nd percentile.

In light of the fact that these children are members of a severely disadvantaged population in terms of socio-economic, cultural and language factors, their development as measured by the Cooperative Pre-School Inventory is deemed to be exceptionally high.

In June, 1975 the project administration reported the extent of parental involvement in the Toy Lending Component. Six parent meetings were conducted in connection with the toy lending service, and a total attendance of 62 was reported. The activities included social events, discussion of home-made educational devices, discussion by a psychologist of child rearing practices, Spanish television, and awards to parents for participation.

During the project year, the Toy Lending staff scheduled 720 [illegible] conducted, indicating a high interest level in this component.

Kindergarten Component

The results of the Inter-American Comprehension of Oral Language Test are given in Table IV, partitioned by language dominance of the students. The pre-post gains were tested for significance using a one-tailed correlated t-test. Test-retest reliabilities are also listed.

Table IV

ORAL LANGUAGE PROFICIENCY

Dominant Language	English						Spanish					
	N	pre		post		r	correlated t-value	N	pre		post		r	correlated t-value
		mean	s.d.	mean	s.d.				mean	s.d.	mean	s.d.		
English	6	22.50	4.18	27.67	1.75	-.43	2.64*	6	9.53	8.94	17.50	11.78	.97	5.17**
Spanish	32	10.79	7.11	22.03	7.21	.59	9.78**	32	18.07	7.25	25.03	4.90	.69	7.47**
Bilingual	5	26.00	1.22	29.20	.84	.73	8.65**	5	26.00	.71	27.80	1.10	.65	4.81**
Total	43	14.19	8.65	23.65	6.84	.65	9.33**	43	17.80	8.13	24.30	6.54	.79	8.46**

* p<.05
** p<.01

As may be seen by viewing this table, the population was predominately Spanish dominant. Significant gains were found for all three groups in both languages, and gains tended to be greater in the second language. Where adequate sample sizes existed, the test-retest reliabilities were satisfactory.

The results for the Screening Test of Academic Readiness are presented in Table V. Again, analyses include one-tailed correlated t-tests and test-retest coefficients.

Table V

READINESS TEST RESULTS

Dominant Language	English							Spanish						
	N	pre		post		r	correlated t-value	N	pre		post		r	correlated t-value
		mean	s.d.	mean	s.d.				mean	s.d.	mean	s.d.		
English	6	36.17	6.40	57.00	3.03	.43	8.83**							
Spanish														
Bilingual	5	45.40	3.05	64.60	9.91	-.11	4.62**	32	27.03	11.78	48.66	13.19	.72	12.96**
Total	11	40.36	6.89	60.45	7.72	.41	8.79**	32	27.03	11.78	48.66	13.19	.72	12.96**

** p<.01

Significant gains beyond the .01 level were found for all these groups in readiness. The pre-post change approximated 20 points. As indicated in the table, the English and bilingual group were tested in English and the Spanish dominant children were tested in Spanish. In view of the sample sizes, the test-retest coefficients are deemed to be satisfactory.

Table VI contains the results of the Child Rating Scale for teachers for the kindergarten unit.

Table VI

CHILD RATING SCALE FOR TEACHERS RESULTS

N=43

Domain	pre	post	change
Communication	3.00	3.79	+.79
Speech	3.12	3.52	+.40
Vocabulary	3.06	3.49	+.43
General Information	3.02	3.55	+.53
Manual Skills	2.95	3.52	+.57
Coordination(muscular)	3.02	3.70	+.68
Persistence	3.02	3.53	+.51
Interpersonal Relations	3.25	3.78	+.53
Nervousness	3.25	3.70	+.50
Behavior	3.72	4.19	+.47
Self-Image	3.36	3.93	+.57

This table reveals that gains ranging from .40 to .79 were realized in the 12 domains considered. Communication and muscular coordination represented the domains with the greatest increase between the pre- and post-measures.

On the twelfth day of May, 1975 the evaluator visited the kindergarten component. One teacher and one aide were present with 14 of the 16 children enrolled at the Barnum School site. During the class under observation, the students were cutting paper for parts of various animal bodies. All 4 children questioned had printed their names on the paper. The students were very eager and proud to show their present and past work to the evaluator. The students spoke English fluently, and reported that they did the following in school: learn, work, have lunch, food and milk (actually a snack), have toys, play, paint, count, and work with letters. The students identified numbers for the evaluator, and 3 of 3 students satisfactorily read words in English. The students sounded out the words carefully. Next,

Several student made materials were present in the room. An adjacent store room contained materials and equipment. This room was also used for coats. Mostly paper and cloth materials were observed. Numbers and colors were effectively displayed. Other displays included clouds illustrated in cotton, a simulated thermometer, and photographs of Puerto Rico. A piano was also present in the room.

V.. ANALYSIS AND CONCLUSIONS

Upon considering the evidence presented herein, it is clear that the project operated effectively at both the Pre-K and Kindergarten levels. In all measured domains, positive and significant changes were realized. Further, the parental committment to the project was particularly extensive in the Pre-K component. Consequently, the project is judged to be highly effective.

Certain limitations, however, regarding the interpretation of the data must be noted. In situations where pre-post gains are reported and tested for significance, one is likely to attribute the gains to the program. Other plausible causes of the gain, however, do exist and constitute threats to the internal validity and subsequent interpretation of the evaluation activities. These threats include natural maturation, events external to the program, and regression to the mean. In other words, gains may have been caused by factors other than those which constitute the program being examined.

Reflecting on the findings of the 1973 - 1974 evaluation, it should be further noted that the staff did extend program services to a greater number of eligible children as recommended. As a result, a high degree of program utilization was realized in the 1974 - 1975 academic year.